

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A particle accelerating apparatus for accelerating charged particles, comprising:

at least two pair of accelerating elements, each accelerating element including a first electrode plate and a second electrode plate, wherein said first and second electrode plates are spaced apart by a gap;

first and second magnets for producing a magnetic field B transverse to a travel path of the charged particles through said gaps of said at least two pair of accelerating elements, to confine the charged particles to a generally circular orbit, wherein said plurality of accelerating elements are located between said first and second magnets; and

a voltage generator for applying a voltage V across each of said first and second electrode plates.

2. (original) A particle accelerating apparatus according to claim 1, wherein said apparatus further comprises particle injection means for providing a source of said charged particles.

3. (original) A particle accelerating apparatus according to claim 1, wherein said apparatus further comprises:

a housing defining a chamber wherein said plurality of accelerating elements are located, said housing including an output port for said charged particles to exit said housing.

4. (original) A particle accelerating apparatus according to claim 1, wherein said apparatus further comprises a deflecting magnet for modifying a trajectory of said charged particles.

5. (original) A particle accelerating apparatus according to claim 1, wherein said apparatus further comprises means for reducing the pressure inside said chamber.

6. (original) A particle accelerating apparatus according to claim 1, wherein each of said first and second electrode plate includes a slot formed therein.

7. (original) A particle accelerating apparatus according to claim 1, wherein said voltage V is in the range of 10 kV to 100 kV.

8. (original) A particle accelerating apparatus according to claim 1, wherein said magnetic field B is in the range of 0.05 T to 50 T.

9. (currently amended) A circular accelerator for accelerating the velocity of a charged particle, comprising:

at least two accelerating gaps;

means for producing an electric field in said accelerating gaps, wherein said charged particle is accelerated by said electric field; and

means for producing a magnetic field transverse to a travel path of the charged particle through said at least two accelerating gaps, wherein ~~[[a]]~~ the travel path of said charged particle is ~~influeneced~~ confined by said magnetic field to a generally circular orbit.

10. (original) A circular accelerator according to claim 9, wherein each said accelerating gap is located between a first electrode plate and a second electrode plate.

11. (original) A circular accelerator according to claim 10, wherein said first and second electrode plates include a slot formed therein.

12. (original) A circular accelerator according to claim 9, wherein said means for producing the electric field includes a voltage generator.

13. (original) A circular accelerator according to claim 9, wherein said means for producing the magnetic field includes a first and a second magnet.

14. (currently amended) A method for accelerating a charged particle, comprising:
applying a voltage across at least two pair of electrode plates, each pair of electrode plates
defining an accelerating gap, wherein said voltage ~~producing~~produces an associated electric field;
~~and~~

applying a magnetic field transverse to a travel path of the charged particle through said
accelerating gaps of said at least two pair electrode plates; and

injecting ~~[[a]]~~the charged particle into said accelerating gap of one of said two pair of
electrode plates; wherein said magnetic field confines the charged particle ~~travels into~~ a generally
circular orbit ~~through said accelerating gaps~~.

15. (original) A method for accelerating a charged particle according to claim 14,
wherein said method further comprises:

deflecting said charged particle by a magnetic field, wherein said charged particle is
diverted from said generally circular orbit.